

An Introduction to the Internet

NASA Dryden Flight Research Center



DRYDEN FLIGHT RESEARCH CENTER

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1.1 The Internet

- A network of interconnecting computer networks
- Allows a single user access to many computer resources
- Uses a suite of protocols



1.2 History

The Internet

- **Began in 1969**
- **Connected military and universities**
- **Resulted in the development of TCP/IP**



1.3 Addressing

Internet Protocol address (IP address)

- IP address is a series of numbers separated by dots
- IP address example
128.40.5.1
- Identifies a computer on the Internet



1.3 Addressing (Cont.)

Domain Name is an Alphanumeric Name

Example

dfrc.nasa.gov

indicates

Dryden Flight Research Center

of the

NASA organization

of the

government



1.3 Addressing (Cont.)

Host Name – Computer Name + Domain Name

Example

www.dfrc.nasa.gov

news.dfrc.nasa.gov

cs2.dfrc.nasa.gov

- These host names all indicate the WWW server at Dryden
- IP address of the same computer is
130.134.64.17



1.3 Addressing (Cont.)

Common Domain Name Abbreviations

k12	K through 12 schools
com	Commercial
org	Organization
edu	Colleges and universities
gov	Government
net	Network of organizations
wy	State example
uk	Country example



1.4 Protocol

TCP/IP

- **Transmission Control Protocol/Internet Protocol**
- **Controls how information is packeted and how packets are sent on the Internet**



1.5 Use Statistics

15,000,000	Users
2,500,000	Computers
30,000	Networks
200	Countries
55%	Commercial sites
35%	Educational sites
10%	Government sites



2.0 World Wide Web (WWW)

- **Began in 1988**
- **Resulted in explosive increase in the use of the Internet**
- **Accessed with "browsers"**
- **Documents are hyperlinked**



2.1 HyperText Transfer Protocol

- http
- Protocol used on the
World Wide Web



2.2 Uniform Resource Locator

- URL
- Specifies protocol, computername, directory name, and file name
- <http://www.dfrc.nasa.gov/Education/K12/k12.html>
 - http = protocol
 - www = computer name
 - dfrc.nasa.gov = domain name
 - Education = directory name
 - K12 = subdirectory name
 - k12.html = file name



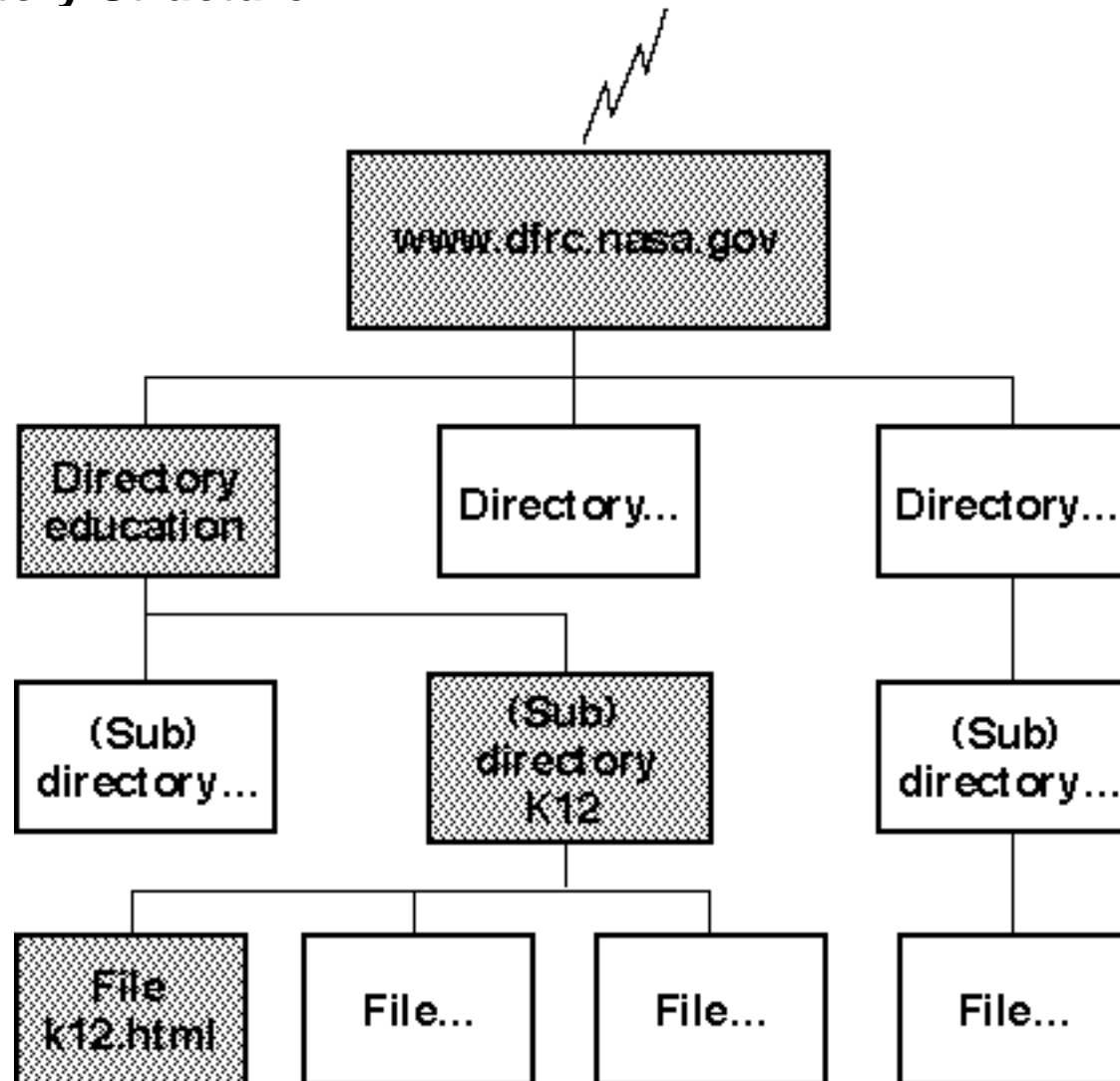
Assignment 1 URL

- Find the home page for NASA Dryden Flight Research Center
- Find the URL for this page
- Find the Dryden Research Aircraft photo server page
- Find the URL for this page



2.2 URL (Cont.)

Directory Structure



2.3 Browsers

- **Software on the user's computer that enables the user to view HTML**
- **Hypertext acts as a pointer to link one document with another**



2.3.1 Graphical Browsers

- Give users access to
 - Text
 - Graphics
 - Sound
 - Movies
 - Links
- Available in several versions
 - Mosaic
 - Netscape
 - Macweb
 - Winweb
 - And others



2.3.2 Text Browsers

- View HTML
- Enable user to follow links
- Show only the text of a document



Assignment 2 Browsers

- Try each of the menu options on your browser
- Learn what each of them does
- Does your browser have
 - Open file
 - Open URL
 - Save file
 - Copy
 - Bookmarks
 - Options
 - Go or view history
 - Home
 - Reload
 - Forward
 - Back
 - Print



3.0 Search Engines

- Sites with searching software
- Allow the user to locate files based on
 - Submitted term
 - Selection from topic menu



3.0 Search Engines (Cont.)

Tips for Searching

- **Use several search engines**
- **Rephrase submitted term to access another selection of documents on the same topic**



3.0 Search Engines (Cont.)

URLs to Some Search Engines

- **Yahoo**
<http://www.yahoo.com/>
- **Webcrawler**
<http://www.webcrawler.com>
- **InfoSeek**
<http://infoseek.com>



Assignment 3 Search Engines

Search for 10 pages on the WWW to include one page for each of the following

- **Frogs**
- **An art museum**
- **Software for Windows or for Macintosh**
- **Rock star(s) online**
- **Allergy information**
- **University of Phoenix**
- **Movies**
- **NASA Headquarters homepage**
- **Grand Canyon**
- **Bahamas**



Assignment 3 (Cont.)

- **Save the URL of each of these pages in a word processing document on your local computer**
- **Write a short description with each URL to explain why the site was interesting**



4.0 File Transfer Protocol

- **FTP**
- **Basic protocol that defines a method for transfer of files**
- **Allows users to get files from a remote host (download)**
- **Allows users to put files on a remote host (upload)**



4.0 FTP (Cont.)

- Many software archives are ftp sites
- Mirror sites are available for popular sites
- User must know where the file is located to be able to transfer the file



4.0 FTP (Cont.)

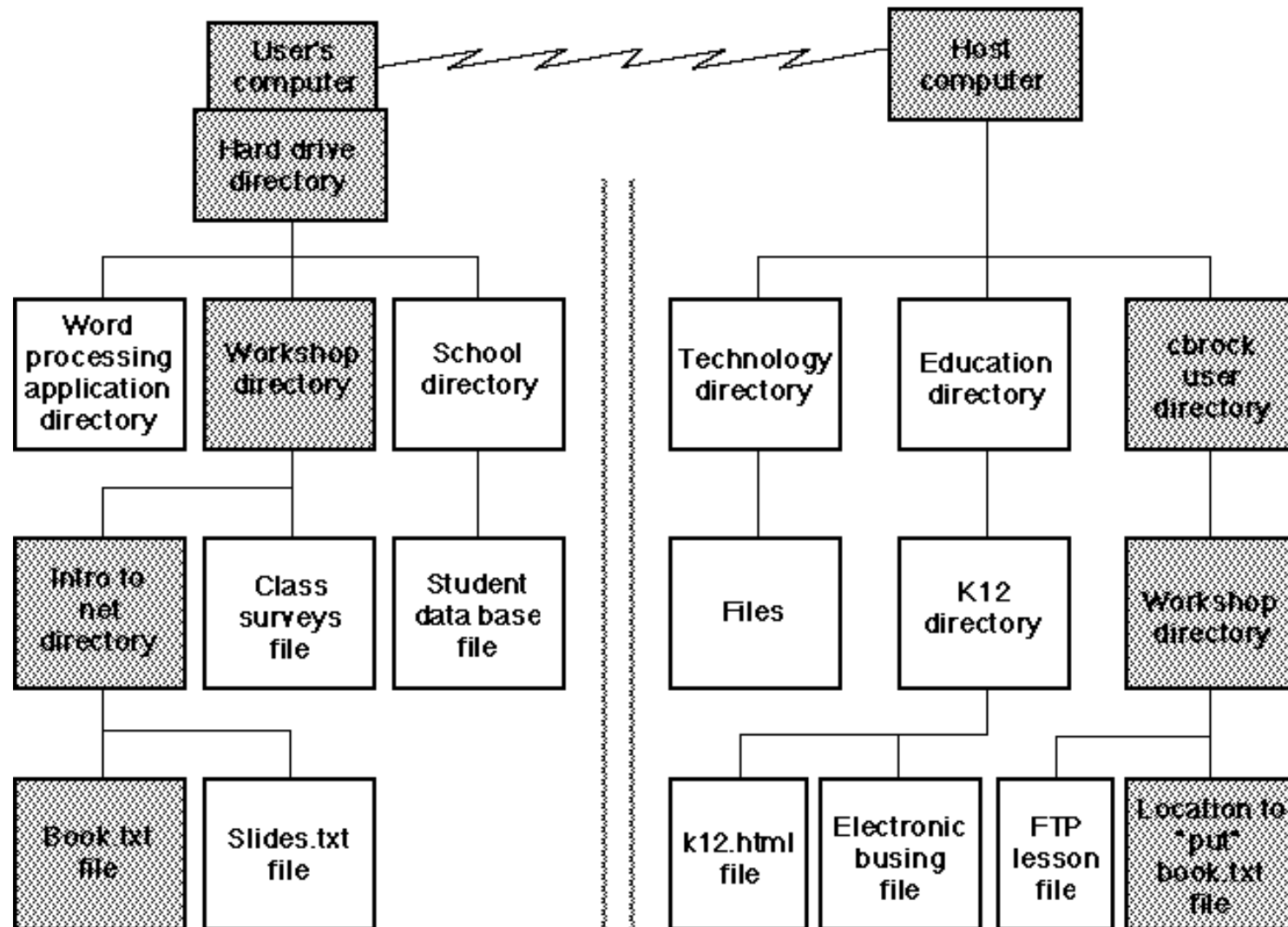
Can be used to send

- Text
- Programs
- Graphics
- Audio
- Video
- Spreadsheets



4.0 FTP (Cont.)

File Structure for Local and Remote



Assignment 4 FTP

- Use the ftp program _____
- Open a connection to:

- Login ID _____
- Password _____
- Directory to find _____
- File to get _____
- Close ftp connection



Assignment 4 (Cont.)

- Open the downloaded file
- Create a file of your own
- Save your file as text
- Put your file on the remote
computer

- Login ID _____

- Password _____

- Directory to put file

- Close the connection



5.0 Telnet

- **Allows user to connect to a remote system**
- **Allows user access to the resources of the remote system**



Assignment 5 Telnet

- Use the telnet program indicated

- Open a telnet connection to:

- Login ID _____

- Password _____

- List the directories

- Change directories

- List files



Assignment 5 (Cont.)

- **Locate the file that you uploaded with ftp**
- **Remove the file that you previously put on the remote computer**
- **Close the connection**



6.0 Electronic Mail

- E-mail
- Mail sent electronically from computer to computer
- Mail sent from an individual to (an) individual(s)
- Can be used to send as attachments
 - Text
 - Audio
 - Programs
 - Video
 - Graphics
 - Spreadsheets



6.0 Electronic Mail (Cont.)

E-mail address indicates

- User
- Computer name
- Domain name

Example

- billthecat@louie.dfrc.nasa.gov
- billthecat = user
- louie = computer
- dfrc.nasa.gov = domain name



Assignment 6 E-mail

- Send e-mail to the following address



7.0 Usenet News

- **Communication from an individual to many individuals**
- **The "bulletin board" of the electronic world**
- **Moderated groups have an individual who oversees the postings to the group**
- **Unmoderated groups do not have a person who decides which messages to post**



7.0 Usenet News (Cont.)

Newsgroup Categories

- **alt.** **Alternative**
- **comp.** **Computer**
- **misc.** **Miscellaneous**
- **news.** **News about usenet**
- **rec.** **Recreation**
- **sci.** **Science and engineering**
- **soc.** **Social issues**
- **talk.** **Debate**
- **k12.** **K-12 schools**



8.0 Hypertext Markup Language (HTML)

- The language used to create World Wide Web pages
- HTML pages are written with a text editor
- Commands are called tags
- Tags are enclosed in < >



8.0 HTML (Cont.)

Tags

- Are generally in pairs
 - A begin tag and an end tag
- Example
 - Begin html = `<html>`
 - End html = `</html>`
 - Begin header 1 = `<h1>`
 - End header 1 = `</h1>`
- Are not case sensitive may be written upper or lower case
 - `<html>` = `<HTML>`
 - `<h1>` = `<H1>`



8.0 HTML (Cont.)

- HTML documents are made up of three parts
 - HTML, HEAD, and BODY
- The entire document must be between these two tags
 - `<html>`
entire document
`</html>`
- The HEAD contains file name information
 - Also contains the TITLE of the document
as it will appear in the title bar of the browser



8.0 HTML (Cont.)

- The head and title code might look like this

<HTML>

<HEAD>

<TITLE>

Basic HTML

</TITLE>

</HEAD>



8.0 HTML (Cont.)

Body

- Contains the entire document that is to be displayed in the viewing window of the browser
- A basic HTML document might look like this

<HTML>

<HEAD>

<TITLE>

Basic HTML

</TITLE>

</HEAD>

<BODY>

This is a basic HTML lesson

</BODY>

</HTML>



8.0 HTML (Cont.)

Headers <H_y> </H_y>

- Y = number 1-6
- Produce large, dark type
- Range from <h1> largest to <h6> smallest

Paragraph <P>

- Produces a blank line between items in document
- Do not need </P>



8.0 HTML (Cont.)

Typewrite text `<TT>` `</TT>`

- **Produces:**

type text in which each
character uses an equal
amount of space

- **Is useful for manually spacing
out items in text as seen through
the browser**

Carriage control `
`

- **Breaks the line**
- **Is no `</BR>`**



8.0 HTML (Cont.)

Horizontal rule `<HR>`

- Produces a line across the page
- Do not need `</HR>`

Bold `` ``

- Produces bold type



Assignment 7 HTML

Produce: Brady Bunch Family Song

- Write it as an HTML document with your text editor**
- View it with your browser**
- Format it to look through the browser like the following example using the tags shown**



Assignment 7 HTML (Cont.)

The Brady Bunch Family Song

Here's the story
of a lovely lady
who was bringing up three very lovely girls
All of them had hair of gold
like their mother
the youngest one in curls

It's the story
of a man named Brady
who was busy with three boys of his own
They were four men
living all together
yet they were all alone

'Till the one day
when the lady met this fellow
and they knew that it was much more than a hunch
that this group must somehow form a family
that's the way we all became the Brady Bunch

The Brady Bunch
The Brady Bunch
that's the way we became the Brady Bunch

Tags

```
<html>  
<head>  
<title>  
</title>  
</head>  
<body>  
<h1>  
</h1>  
<p>  
<br>  
</body>  
</html>
```



8.0 HTML (Cont.)

Lists

- **Three types**

1. **Defined list**

- **Show a term**
- **Show the definition indented under the term**

2. **Unordered list**

- **List items preceded by a black bullet**

3. **Ordered list**

- **List items are numbered**



8.0 HTML (Cont.)

This code:

```
<h1> This is a Defined List </h1>
<p>  <dl>
<dt> Apples
<dd> A wormy fruit
<dt> Oranges
<dd> A citrus fruit
<dt> Bananas
<dd> A tropical fruit
</dl>
```

Produces:

This is a Defined List

Apples
A wormy fruit
Oranges
A citrus fruit
Bananas
A tropical fruit



8.0 HTML (Cont.)

This code:

```
<h1> This is an Unordered List </h1>  
<p>  
<ul>  
<li> Apples  
<li> Oranges  
<li> Bananas  
</ul>
```

Produces:

This is an Unordered List

- Apples
- Oranges
- Bananas



8.0 HTML (Cont.)

This code:

```
<h1> This is an Ordered List </h1>  
<p>  
<ol>  
<li> Apples  
<li> Oranges  
<li> Bananas  
</ol>
```

Produces:

This is an Ordered List

1. Apples
2. Oranges
3. Bananas



Assignment 8 HTML

Add an example of each type of list to your Brady Bunch document

Tags to use:

Defined list

**<dl>
<dt>
<dd>
</dl>**

Unordered list

**

**

Ordered list

**

**



8.0 HTML (Cont.)

Images

Tag example:

```

```

- Filename must include the complete path to the file if the file is not in the same directory as the document in use

Images can be saved from the WWW with Netscape by placing the cursor on the image and holding the mouse key down to see a popup menu and selecting "Save as"



Assignment 9 HTML

**Add an image to your
Brady Bunch file**

Tag to use:

``



8.0 HTML (Cont.)

Links <A>

- Two types

1. External links

- Link to any document that is outside of the document in use

2. Internal links

- Jump to another section of the document in use



8.0 HTML (Cont.)

External link

` text to click on `

- Filename must give complete path to file if the file is not located in the same directory as the html document in use

Example:

` DFRC Photos `



Assignment 10 HTML

Add an external link to your Brady Bunch file

Tag to use:

` text to click on `



8.0 HTML (Cont.)

Internal

- Consist of two parts
- Link = the place in the document where the user will click
- Anchor = the place in the document where the link is to jump

Tags to use:

Link

` text to click on `

Anchor

` anchor `



Assignment 11 HTML

Add an internal link to your Brady Bunch file

Tags to use:

Link

` text to click on `

Anchor

` anchor `

